

ALTERNATOR MALFUNCTION CHECKLIST

As we all know, in most of our airplanes the electricity is produced by an alternator. To prevent overvoltage from damaging anything, there is a regulator and if that does not do its job there is also an overvoltage relay.

It is not too unusual for a temporary spike to trigger the over voltage relay. In our Cessna we have a light that will come on to indicate this. The Citabrias do not have a light. In the Cessna and Citabrias the charge meter will show a discharge at this point. Note that it is possible to lose the alternator in the Cessna without the red light coming on. Include the charge meter in your scan.

The normal method to try to fix this consists of several steps

1/ First and most important, switch off all, and I mean ALL, electrical equipment. That includes all radios, intercom, transponder, and any other switch. Double check this. But do not yet turn off the main electrical master.

(you do carry some flashlights at night don't you)

2/ Now, when you have double checked everything is off, switch off the main electrical master (and battery switch if it is separate).

3/ Wait a minute (literally) or longer. If the overvoltage relay tripped, give it a chance to cool off. It is just a glorified circuit breaker.

4/ While you are waiting, how about checking the circuit breakers? Don't reset them yet.

5/ Switch on the battery (if applicable) and alternator switch(es).

6/ Switch on needed electrics one by one. If a circuit breaker is popped, push it in when you want that piece of equipment turned on.

Citabrias: They mostly have fuses, not breakers. If you find that you cannot turn something on, check the fuse and if necessary use a spare.

If any circuit breaker pops again, DO NOT reset it again. Same with a fuse blowing the second time.

If the red light is still on (Cessna) or the meter still shows a discharge (any airplane), DO NOT try again. Assume your battery will give out shortly and plan out your course of action accordingly. If you catch the problem immediately, the battery should last half an hour or more. However how sure can you be that you caught it straight away?

Switch off unnecessary loads.

Consider switching off the transponder, it uses a lot of juice.

You may need to land with no flaps (Cessna) and/or no landing light.

SMOKE OR ELECTRICAL BURNING SMELL IN THE CABIN:

Note that if you smell smoke, you want to do it a little differently. Your main concern is to stop whatever is burning.

FIRST SWITCH OFF THE MAIN ELECTRICAL BATTERY AND ALTERNATOR MASTER(s)

Then switch everything off as above

Then proceed from step 3 above

If at any time the smell returns, switch off whatever you just switched on.